

FIXING DEVICE FOR A SEAT BELT RETRACTOR

PATENT CLAIMS

5 1. Fixing device for a seat belt retractor to be attached to a vehicle
part, whereby the housing plate of the seat belt retractor housing has at
least one fixing opening for receiving a screw connection engaging the
vehicle part in a fixing opening formed thereon and the seat belt
10 retractor housing is rotatably disposed relative to the fixing opening of
the vehicle part, so that the seat belt retractor is oriented automatically
in a direction of a force of a belt which moves at an angle with respect
to the axis of the shaft, characterized in that the seat belt retractor
housing (10) is rotatably held on a holder part (13, 19, 25) to be fixedly
15 connected with the vehicle part (40) and the seat belt retractor housing
(10) is held by means of the holder part (13, 19, 25) at a distance to the
fixing opening (41) of the vehicle part (40) and is fixed to the holder
part (13, 19, 25) in such a way that the seat belt retractor housing (10)
is rotatable relative to the holder part (13, 19, 25) in an opposite
direction to a pre-set resistance.

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2. Fixing device according to claim 1, characterized in that the
holder part (13) is formed as a flat part with an opening (14) for guiding
through of an attachment means serving to attach the holder part (13)
to the vehicle part (40) and with a further opening (15) for rotatable

attachment of the seat belt retractor housing (10) to the holder part (13).

3. Fixing device according to claim 2, characterized in that the attachment of the seat belt retractor housing (10) to the holder part (13) takes place by means of a rivet (16) penetrating an opening (15) of the holder part (13) and the fixing opening (32) of the housing plate (11) of the seat belt retractor housing (10).

4. Fixing device according to claim 2 or 3, characterized in that the holder part (13) rests on the flat housing plate (11) of the seat belt retractor housing (10) provided with the fixing opening (32).

5. Fixing device according to claim 2 or 3, characterized in that the housing plate (11) of the seat belt retractor housing (10) provided for connection of the holder part (13) has an off-set region (18) for receiving the associated end of the holder part (13) and the off-set region, together with the outer edges of the holder part (13), form a limitation for the rotational movement of the seat belt retractor housing (10) relative to the holder part (13).

6. Fixing device according to one of claims 2 through 5, characterized in that the holder part (13) has a fixing shoulder (17)

projecting at an angle from it and insertable into a further opening formed in the vehicle part (40).

7. Fixing device according to claim 1, characterized in that the holder part comprises a collar screw (19) that penetrates through the fixing opening (32) of the housing plate (11) of the seat belt retractor housing (10) and that is fixed with an end threading (20) in the fixing opening (41) of the vehicle part (40), whose collar (21) braces against the vehicle part (40), whereby the seat belt retractor housing (10) sits with its fixing opening (32) on the collar (21) of the collar screw (19) and is held by means of the screw head (22) of the collar screw (19), and a pre-stressed spring element (24) is arranged on the collar (21) of the collar screw (19) between the vehicle part (40) and the seat belt retractor housing (10).

8. Fixing device according to claim 7, characterized in that the spring element (24) comprises a plate spring.

9. Fixing device according to claim 1, characterized in that the holder part (25) is formed as a U-shaped component that is attachable onto the housing plate (11) having the fixing opening (32) and accommodates the housing plate (11) between its U-plates (26), whereby the openings (28) located in the U-plates (26) of the holder part (25) are flush with the fixing opening (32) of the housing plate (11)

and one of the U-plates (26) of the holder part (25), upon mounting of the seat belt retractor onto the vehicle part (40), rests between the vehicle part (40) and the housing plate (11) of the seat belt retractor housing (10).

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10. Fixing device according to claim 9, characterized in that a fixing nut (30) that can be screwed via a fixing screw (31) into the fixing opening (41) formed in the vehicle part is formed as a collar nut, whose collar height corresponds to the material thickness of the housing plate (11) of the seat belt retractor housing (10) inclusive of the material thickness of the U-plate (26) of the holder part (25) lying between the vehicle part (40) and the housing plate (11).

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11. Fixing device according to claim 9 or 10, characterized in that in the intermediate space formed by the U-plate of the holder part (25) lying between the vehicle part (40) and housing plate (11) of the seat belt retractor housing (10), a spring element is arranged.

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12. Fixing device according to claim 11, characterized in that the spring element is formed as a plate spring.

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13. Fixing device according to one of claims 9 through 12, characterized in that on the U-plate of the holder part (25) facing away from the vehicle part (40), projections are formed which at least

partially surround the opening (28) formed therein, and which serve as a mounting holder and anti-twist device for a fixing nut (30).

5 14. Fixing device according to one of claims 9 through 12, characterized in that on the U-plate (26) of the holder part (25) facing away from the vehicle part (40), a fixing nut (30) is fixedly mounted to be oriented with the opening (28) formed thereon.

10 15. Fixing device according to one of claims 9 through 14, characterized in that the holder part (25) has a fixing shoulder (27) projecting from it at an angle for engagement in an associated further opening of the vehicle part (40).

15 16. Fixing device according to claim 15, characterized in that the holder part (25) penetrates with its fixing shoulder (27) the housing plate (11) of the seat belt retractor in an associated further recess (33).

20 17. Fixing device according to at least one of claims 1 through 16, characterized in that the holder part (13, 25) comprises metal and a fixing nut (30) arranged on the holder part (25) is formed as a weld nut that is fixedly connected with the holder part.

18. Fixing device according to at least one of claims 1 through 16, characterized in that the holder part (13, 25) comprises plastic and a

fixing nut (30) provided on the holder part (25) is connected as one piece with the holder part.

5 19. Fixing device according to claim 1, characterized in that the holder part comprises a collar nut (47) that penetrates through the fixing opening (32) of the housing plate (11) of the seat belt retractor housing (10) via a collar (48) and that can be screwed onto a fixing screw anchored on the vehicle part (40), whose collar (48) abuts the vehicle part (40) or the fixing screw, whereby the seat belt retractor housing (10) sits rotatably with its fixing opening (32) on the collar (48) of the collar nut (47) and wherein on the side of the housing plate (11) facing away from the vehicle part (40), a holding sheet (45) held on the collar (48) of the collar nut (47) is arranged which engages through an associated further recess (33) in the housing plate (11) via a fixing shoulder (46) projecting from it at an angle and which can be fixedly, non-rotatably disposed in a further opening formed in the vehicle part (40), and in that the seat belt retractor housing (10), by means of tongue projecting into the recess (33) and guided through an aperture (50) formed in the fixing shoulder (46), is fixed relative to the holding sheet (45) and under a load, as a result of deformation of the tongue (49) engaging through the fixing shoulder (46), is rotatable.